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ABSTRACT

The professional developmental activities of participants after assessment were studied in a situation where no specific developmental program was provided by the assessment center or the sponsoring organization. Characteristics of participants were studied to determine if certain types of persons are more likely to conduct follow-up activities to increase their skills after assessment. Of the initial sample of 104 educators who took part in a regional school administrator assessment center project over a 2-year period, 46 returned mailed questionnaires (the Myers-Briggs Type Indicator (MBTI), the Self-Directed Learning Readiness Scale, and an information sheet) and agreed to be interviewed by telephone. Forty-two of these subjects had taken some developmental action in the area of skill improvement. Those who took improvement actions were fairly equally distributed by gender, race, assessor's overall evaluation scores, and experience in education and administration. The large majority worked on developing two or three skills and there was a strong tendency for respondents to seek to improve the skills that had been rated relatively low during the assessment center process. Improvement strategies included a wide variety of activities, from enrollment in a formal course to finding a way to practice a skill on one's own. When participants rated their own improvement, intuitive types on the MBTI tended to indicate more improvement than sensing counterparts. Reasons sponsoring agencies gave for participation in assessment did not relate primarily to the efforts of participants to improve their skills. In the final analysis, many more participants used the process in selection than previously indicated. The participants appear to have created their own opportunities for growth, indicating that a formally structured program is not a necessity for professional growth after assessment. Ten tables provide study findings. (SLD)

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AN INVESTIGATION OF PARTICIPANT UTILIZATION OF ASSESSMENT CENTER RESULTS FOR PROFESSIONAL DEVELOPMENT

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AN INVESTIGATION OF PARTICIPANT UTILIZATION OF ASSESSMENT CENTER RESULTS FOR PROFESSIONAL DEVELOPMENT

Dillon-Peterson (1981) contends that against a backdrop of uncertainty and lack of public confidence, determined educators continue to work to improve schools and release the potential of the persons working in them by developing a coherent, comprehensive process for self-analysis and renewal. This idea is echoed by Levine (1989, p. xv), who stresses the importance of providing "structural supports and a school culture that values and creates opportunities for personal and professional development." Assessment centers for educational administrators are one such process that can foster both individual and organizational growth. The emphasis on the developmental aspect of educational administrator assessment centers is relatively new, however. The original intent of administrator assessment was simply to identify highly skilled persons to become school leaders (Hershey, 1986). National interest in the training and development of persons assessed only recently resulted in the creation of a structured, long-term developmental component designed to follow the assessment process.

However, because of cost and scheduling considerations, many assessment center participants are unable to participate in this nationally designed developmental component. The question then arises as to whether professional development occurs without such a structured follow-up. Do participants, either individually or

in conjunction with their organizations, pursue professional development activities as a result of the assessment process when that process terminates with a report of their administrative skill levels?

This study attempts to answer these questions for participants in one regional assessment center. It investigates participant developmental activities after assessment when no specific structured developmental program is provided by the assessment center or the sponsoring organizations. Since each center culminates with a detailed report on the individual's performance in the center that includes specific recommendations for skill development, it has been assumed that assessment center participants will make some use of these recommendations. The authors of this paper found very little research in either the business or educational sectors, however, that looked at whether such skill development occurs. The only documentation of professional growth subsequent to assessment is from studies of programs especially designed by organizations to train and develop employees. Thus, the question remains: Do administrator assessment center participants, in the absence of formal structured developmental programs, pursue professional growth activities as a result of assessment? Related questions are whether the educational organization that sponsored their assessment supports such growth activity either financially or through other support techniques and, if so, whether such support increases developmental efforts or results in different types of developmental activities.

In the present study, several characteristics of participants were viewed to determine if certain types of persons are more likely to conduct follow-up activities to increase their skills after assessment. Besides demographic factors such as age, gender, position, and years of experience, the self-directed learning readiness and personality type of each person were also measured in order to investigate if these two factors relate to professional growth efforts or to the types of growth activities pursued.

While the results of this study have limited generalizability, the study begins to move the research on the assessment process into new territory - that of how participants respond to the assessment results. It also relates the rich literature on adults as self-directed learners with the idea that assessment center participation may foster adult learning. The findings have practical implications for the conduct of assessment centers and for organizations sponsoring assessees, and they point the way to further needed research on post-assessment-center activities.

Literature Review

Assessment Centers and Administrator Development

The need to identify and develop a cadre of competent leaders for our schools is well documented in the current educational reform literature. Achilles (1984) refers to the "stormy weather ahead in educational administration" (p. 127) as he describes the impending lack of highly qualified persons to

step into administrative positions in the next decade. The Report of the National Commission on Excellence in Educational Administration (1987) reveals a similar concern. Among the troubling aspects in administration, this report cites the lack of leader recruitment efforts and professional development programs for school administrators.

During the last two decades, assessment centers have proliferated, primarily for the purpose of selecting employees for management positions. By the mid 1980s approximately 2000 corporate operated assessment centers and over 40 National Association of Secondary School Principals assessment center projects existed (Nichols and Hudson, 1981; Hersey, 1986). As assessment center methodology has become more standardized and initial implementation problems have been addressed, the focus has shifted from selection to development (Olivas, 1980; Fitz-enz et al., 1980). Assessment is frequently being viewed in the corporate world as one part of a development system where individuals with advancement potential are identified, their strengths and weaknesses are assessed, and they are assisted in long-term growth. How this long-term growth is to be accomplished is subject to debate. One view is that organizations sponsoring assessment centers should design specific developmental programs to follow the assessment process (Olivas, 1980; Fitz-ens et al., 1980; Nichols and Hudson, 1981; Hersey, 1986). This view is based on the contention that no development will occur if the process ends only with the assessors' report and an action plan for the participant to pursue. Fitz-ens et al. (1980) caution that people often leave

the assessment experience in a confused and anxious state of mind and are not very effective in utilizing the results even if they try.

On the other hand, several assessment center observers suggest that the assessment process itself serves as a strong catalyst for professional development although little research is available to support this supposition. Thornton and Byham (1982) cite the diagnostic aspect of assessment and maintain that through the complicated and widespread training responses to assessment, behavioral change can be accomplished. Schmitt, Ford and Stults (1986) found that participation in the assessment center process resulted in a changed self-perception of administrative and interpersonal skills. Noe and Steffy (1987) report that such participation influences job involvement. They conclude that the assessment center evaluation may have an impact on an individual's motivation to develop managerial skills. Finally, Johnson and Douglas (1985) reveal that 66% of the women educators they studied reported working on skill improvement after assessment even though only 15% of this sample indicated that their school district initiated any special developmental experiences for them.

Three explanations for the occurrence of professional growth in the absence of structured developmental programs are offered in the literature. The first is that the last step in the assessment process, the feedback of results, is a first step toward development as long as that feedback includes a detailed developmental report with behavioral examples of strengths and

weaknesses and a set of specific recommendations to strengthen those areas where limitations were identified (Quick et al., 1980). A second explanation is referred to by Klimoski and Brickner (1987) as the "self-fulfilling prophecy." Being selected for an assessment center may reinforce the feelings of self-efficacy as a competent administrator candidate and thus cause the person to expend more effort to develop the skills necessary for success. A third explanation is that participants' superiors may show an increased interest in helping them develop, especially if they achieve a high score in the center (Teel and DuBois, 1983). Despite these explanations, the fact remains that little research has been conducted on the impact of assessment on individual growth and development.

Assessment Participants as Self-Directed Learners

An additional rationale for participant follow-up on assessment center results is found in the concept of self-directed learning. Tracy and Schuttenberg (1988) point out that, although this concept has not been applied to the professional development of educators, it may be a fruitful way to view educator development efforts. The self-directed learner may control both what will be learned and how that learning will be accomplished. He or she may reject, add or change resources, decide whether to continue or terminate the learning and determine the adequacy of the learning outcomes (Mocker and Spear, 1982). Therefore, assessment center participants who have a bent toward self direction in learning are likely to view the feedback results as an opportunity for learning. They will

design their own learning agendas based on these results rather than rely on structured programs presented by their organization. Tough's research (1979) supports this hypothesis. He discovered the prevalence of self-directed learning through his study of adult learning episodes where 68% of the learning episodes were self-planned and initiated. A number of replications of his initial research have resulted in similar findings.

Guglielmino (1978) developed an instrument to measure the self-directed learning readiness of adults in her "Self-Directed Learning Readiness Scale" (SDLRS). Composed of eight factors related to self-directed learning, the SDLRS indicates the degree of likelihood that a person will engage in self-directed learning. A number of studies have supported the validity of the instrument. It might be expected that those individuals scoring high on the SDLRS would be more likely to pursue their own developmental activities after assessment.

Even if the assessment center participant is a self-directed learner, there is strong evidence that organizational support for such learning is an important prerequisite to its occurrence. Kasworm (1983) found that self-directed learners may regress under organizational conditions that inhibit self-directed learning. Similarly, Guglielmino, Guglielmino and Long (1987) discovered that persons who scored high in self-directed learning readiness did not perform well in positions that emphasized routine activities and did not allow for individual initiative. Applied to assessment center participants, this research would suggest that although participants who exhibit self-directed learning characteristics may not require structured developmental

programs in order to initiate skill improvement efforts, they will need the support of their organization if these efforts are to be sustained.

Personality Type and Impact of Assessment

Assessment center participant personality type and assessment results or utilization of those results have not been linked in any of the research reviewed for this study. However, some of the literature on administrator personality type suggests that such a connection may exist. Hirsh and Kummerow (1987) describe the effects of preferences in work situations for each of the personality types as measured by the Myers-Briggs Type Indicator (MBTI). For example, the Sensing type may enjoy using developed skills more than learning new ones while the Intuitive person prefers just the reverse. It could be hypothesized that the Intuitive person would be more likely to follow up on assessment recommendations for skill development than would the Sensing person. A number of the other preferences cited by Hirsh and Kummerow might also have implications for the strategies persons are likely to use in pursuing growth activities and the amount of support that they need from the organization.

A very limited body of research has studied the personality types of administrators. Lueder (1983) reports that these studies indicate that administrators tend to be characterized as Sensing-Thinking-Judging rather than Intuitive-Feeling-Perceptive personalities. One might then expect that those persons who have been "tapped" as potential administrators and sent to the assessment center have similar personality profiles. Two studies

of school administrators have found relationships between personality type and performance on skills measured in the assessment process. Brightman's research (1984) describes differences in decision making styles between different personality types. Lueder (1983) discovered a significant difference in problem solving strategy for the Sensing and Intuitive type administrators.

The findings of this small body of research on administrator personality type indirectly suggest there may be relationships between personality type and self-directed learning readiness, assessment center evaluation score, and actions and strategies for action following assessment. For this reason, personality type has been included as a variable in this study.

Methods

Sample and Instrumentation

The initial sample size included 104 educators who had participated in a regional asssessment center project over a 2 year period. Each of these persons was mailed a packet that included the MBTI, the Guglielmino SDLRS, and an information sheet to gather data on his/her age and professional experience. Data were already available on participants' gender and race. Anonymity was assured. After one mailed follow up, a total of 58 packets (56%) were returned to the researchers. Of the 58 persons returning the questionnaires, 46, 44% of the total sample, agreed to be interviewed by telephone.

Comparison of the sub-sample of 46 with the initial sample

of 104 reveals that the interview group is very representative of the larger sample. There is an approximately equal distribution of males and females, ethnic groups, age, and educational experience between the two samples. The interviewed group had a slightly higher percentage of principals (13.0% as compared to 7.7% for the initial sample). In addition, the smaller sample was representative of the larger group in scores on the assessment process both for overall score and scores for each of the twelve skills assessed. Since participants were not aware of the specific purpose of the study, it is assumed that the responses did not necessarily reflect development activity but rather a willingness to participate in the study.

A structured telephone interview was designed to gather data on the number of skills each participant had worked to develop, strategies used to develop those skills, how the decision to develop skills was reached, and perception of the degree of skill improvement. Information was also gathered on types of moral and material support provided by the participants' school districts. The interview questions and format were reviewed by several experts in the field for clarity and content validity, and the interviewing procedure was field tested with several persons. The resulting modifications resulted in an interview format that took approximately 15 - 20 minutes to conduct. Three persons, the two researchers and a research assistant, critiqued each others' trial interviews to assure consistency in the process. Interview schedules were set up ahead of the actual interview so that the persons involved could participate without interruption.

In addition to the telephone survey of the assessment center participants, a questionnaire was designed for the school districts which had sponsored them in order to collect data on the ways in which the district had used the assessment center results and the types of support they had provided to participants following assessment. Of the 23 educational agencies who had sponsored participants (18 public school systems, 2 parochial school systems, 1 county board of education, 1 private school, and 1 university) 16 (70%) responded. The questionnaire for school districts was developed and refined in a similar manner to the telephone survey. The total return rate was based on one followup request.

Data Analysis

The independent variables in this study included the assessment center evaluation scores, gender, ethnic background, age, experience, personality type, self-directed learning readiness, and school district support. The dependent variables included amount of activity to develop skills, type of activity pursued, and amount of perceived skill improvement. Statistical procedures used to test relationships between variables were Pearson correlations, chi square tests, and General Linear model procedures. Level of significance was set at .05.

Findings

Findings are reported in four major areas: (1) the quantity and type of developmental efforts engaged in by assessment center participants, (2) the degree of skill improvement resulting from

their developmental efforts, (3) the support participants received from their sponsoring institutions, and (4) the relationship of self-directed learning readiness and personality type with participants' developmental efforts after assessment. Figure 1 presents a listing of the twelve skills assessed and their definitions.

Quantity and Type of Developmental Efforts

One research question dealt with the degree that assessment center participants pursued professional development activities to improve their administrative skills after receiving their feedback report. Data analysis revealed that 42 of the 46 persons interviewed (91%) reported taking some developmental action. Of those taking action, 16 (38%) had received lower overall assessments of their administrative skills during the assessment center process (below 3 on a 5 point scale), while 26 (62%) had received higher assessment. Those who took improvement actions were fairly equally distributed by gender, race, assessor's overall evaluation scores, years' experience in education and years' experience in administration. There was, however, some difference based on the participants' position, with principals, assistant principals, and directors more likely to have taken skill improvement actions than teachers, guidance counselors, and supervisors (see Table 1).

Insert Table 1 about here

Of the 42 participants who took action for skill improvement, 29 (69%) worked to improve more than one skill, with

six skills being the most skills acted on. However, the large majority of persons reporting working on multiple skills addressed two or three skills. Only one person reported working on four skills and one on six skills.

There were some interesting findings regarding the relationships between respondents' gender, position, race, and average assessors' evaluation scores with the number of skills worked on. Table 2 displays these findings. The only statistically significant chi square test was that for gender, with men more likely than women to report working on multiple skills. Although position was not significant at the .05 level, principals clearly did not pursue multiple skill improvement as frequently as did teachers or assistant principals. Age, race, years' experience, personality type, self-directed learning readiness, and assessors' overall evaluation score all showed no significant relationship to number of skills worked on.

Insert Table 2 about here

Another research question was whether assessees were most likely to seek to improve those administrative skills which were rated lower by the assessors in the assessment center. To investigate this question, the assessors' mean rating on each of the twelve skills was correlated with the assessees' decision to work to develop the skill. Table 3 provides support for this hypothesized relationship. With the single exception of the skill of Stress Tolerance, all of the correlations are negative as would be expected if there were a relationship between receiving a low rating on a skill and choosing to work to improve

it. While only five of the negative correlations are significant at the .05 level, they are all relatively low, with the highest being .30. It may be concluded, therefore, that there was a strong tendency for respondents to seek to improve skill areas that were assessed relatively low during the administrator assessment center process.

Insert Table 3 about here

A third research question was what strategies persons used to pursue skill development. It was found that strategies included a wide variety of activities, such as enrollment in a formal course or workshop, working with a mentor, reading on one's own, and finding a way to practice a particular skill. Since no formal developmental programs for skill development were available as a follow-up to the assessment center experience, it was hypothesized that the majority of participants would utilize informal strategies like collaborating with a mentor or practicing the skills on their own. The data support this hypothesis (see Table 4). 91% of the respondents reported practicing skills on their own, 84% read pertinent literature, and 62% collaborated with a mentor. In contrast, only 58% reported attending workshops and 33% reported attending courses for academic credit.

Insert Table 4 about here

A further question for research dealt with the locus of control for decisions to work on particular skills and to pursue

various strategies for skill development. Data revealed that 77% of the decisions to work on particular skills were made on one's own, 21% were collaborative decisions between oneself and others, and only 2% of the decisions were prompted by others. The corresponding figures for the decisions on strategy selection were 72%, 21%, and 7%.

An interesting finding relative to the number of developmental efforts made following assessment is the distribution of these efforts across the twelve assessed skills. Table 5 illustrates this distribution. While each of the twelve skills was targeted by several participants, the most often chosen skills were Sensitivity, Educational Values, Problem Analysis, Organizational Ability, and Leadership. Stress Tolerance and Personal Motivation were the least popular.

Insert Table 5 about here

Improvement Resulting from Developmental Efforts

The participants were asked for their perceptions of how much they had improved their administrative skills in those areas where they had taken action (great improvement, moderate, small, none, or not certain). None of the interviewees perceived that they had made no improvement as a result of their developmental efforts, although 6% of the responses indicated uncertainty about how much improvement had been made. In 76% of the responses, interviewees reported that they had made moderate or great improvement, while in 18% of the cases, small improvement was reported.

According to the participants interviewed, most of their developmental efforts are continuing. 95% reported that they were still working on the skill at the time of the telephone interview, even though 64% of the developmental efforts had been reported to have begun within a month after assessment. Since the interviews took place between six and eighteen months after assessment, lengthy improvement efforts are suggested.

The question of whether the amount of skill improvement reported by respondents was related to any of the demographic variables was investigated using the general linear models procedure. A total improvement score for each respondent was calculated based on the average improvement levels reported, on a four-point scale: 1 = no improvement, 2 = small improvement, 3 = moderate improvement, 4 = great improvement. It was found that there were no significant relationships between the total improvement scores and the variables of sex, position, average assessors' scores, most of the Myers-Briggs scores, years of experience in education, years of experience in education, years of experience in administration, and age.

Some interesting findings, however, were revealed regarding the relationships between race, score on the Self-Directed Learning Readiness Scale, and the Sensing-Intuitive Scale on the Myers-Briggs Type Indicator, and the levels of skill improvement reported. These findings are displayed in Table 6. The only statistically significant relationship is found for race, where non-caucasians (blacks and hispanics) reported higher levels of skill improvement than did caucasians. While not statistically significant, it was of interest to note that those scoring lower

on the Self-Directed Learning Readiness Scale reported somewhat lower levels of skill improvement than did those scoring higher. Also, those with the Myers-Briggs personality type of Intuitive tended to report somewhat higher levels of skill improvement than did those with the personality type of Sensing. The distinction between Intuition and Sensing relates to ways of perceiving information: the former is sensitive to meanings, relationships, and possibilities beyond basic information, while the latter is sensitive to facts or happenings observed through the five senses. Because of this distinction, it might be expected that the Intuitive personality would be more sensitive to skill development opportunities than would the Sensing personality.

Insert Table 6 about here

Support from Sponsoring Institutions

The main reasons that the employing agencies gave for their participation in the assessment center process were similar to those identified in the literature: 50% hoped to identify potential administrative talent, while 44% desired to use the results as the basis for professional development. Only one organizational respondent indicated that the main reason for the organization's participation was to actually select persons for administrative positions.

Reported actual use of assessment center results, however, did not always match the organizations' intents. 38% reported using the results for identifying talent (compared to an intended 50%), 31% reported using results for selecting administrators

(compared to an intended 6%), and 63% reported using the results as the basis for professional development (compared to an intended 44%).

Employing agencies were asked what actions occurred as a result of the assessment process and whether such actions took place at the central office level, the building level, or both. Inspection of Table 7 reveals that, at the central office level, the action most frequently taken (in 94% of the responding agencies) was to hold a meeting with the assessee to review the assessment results. In 75% of the employing agencies, meetings were also held with the assessees' supervisor to discuss the assessment results. Other frequently occurring actions at the central office level were to monitor the assessee's skill improvement (44% of the agencies), and to provide financial support to the assessee in his or her improvement efforts (44%). In 37% of the agencies, specific skills were selected for the assessee to work on, the assessee was met with to help set learning goals and activities, and the assessee was helped in deciding what actions to take to work on specific skills.

Insert Table 7 about here

At the building level fewer actions were taken. Those most frequently taken at that level were providing non-financial support to the assessee to improve skills, assigning the assessee projects to improve specific skills, and helping the assessee decide what skills to work on. Each of those three actions occurred in 31% of the responding agencies. Activities which

occurred at the building level in 25% of the agencies were holding meetings with the assessee to review assessment results, and helping the assessee decide what actions to take in working to improve specific skills. In very few of the responding agencies were a variety of actions taken at both central office and building levels.

Evidence that employing organizations monitor the skill development of their assessment center participants is found in the approaches the organizations report employing to evaluate skill improvement efforts. Analysis of the data reveals that the most frequently employed evaluation approaches at the central office level were formal reports by administrators who met with the assessees (in 57% of the organizations) and personal interviews with the assessees themselves (in 50% of the organizations). At the school building level, informal monitoring of achievement (32%) and personal interviews with the assessees (25%) were the two most frequently occurring evaluation methods.

The questions of whether receiving material support or moral support was related to the amount of skill improvement reported were also investigated by use of the general linear models procedure. The analysis showed no significant difference in level of skill improvement reported by those who did or did not report receiving material support. For moral support, the picture is quite different, with those receiving it reporting a significantly higher level of skill improvement than those not receiving it. When it is considered that only one person out of the 39 in the analysis reported not receiving moral support, we

must temper the interpretation of this finding somewhat. In this one case, however, the lack of moral support was related to a definite perception of less achievement in skill improvement.

Effects of Self-Directed Learning Readiness and Personality Type

As a group, the assessment center participants in the present study rank high in self-directed learning readiness, based on the results of the SDLRS (see Table 8). 76% scored in the Above Average to High range compared to national samples from a variety of professions. When those scoring at the Average level are included, 98% are accounted for. Only a single participant scored in the Low range.

Insert Table 8 about here

While it was, therefore, difficult to determine what relationship this variable had with the number of skills worked on or with the achievement of skill development, there was an interesting finding regarding level of self-directed learning readiness. For the 42 persons who reported taking action to improve administrative skills, there were no statistically significant differences (chi square) between those who received lower or higher assessor ratings and their gender, position, or race. There was, however, a significant difference, at the .01 level, between assessors' ratings and respondents' scores on the SDLRS. Those who scored Above Average or High on the SDLRS tended to be those who had been given high overall administrative skill ratings by the assessors during the assessment center experience (see Table 9).

Insert Table 9 about here

Table 10 shows the results when the four dimensions are combined into the sixteen Myers-Briggs personality types. While several personality types were totally absent in this sample (ISTP, ISFJ, ESTP, and ESFP), it is interesting to note that 55% of the participants who completed the instrument and 52% of those who took action to improve administrative skills fell into only three of the sixteen personality types: ISTJ, ESTJ, and ENTJ. Myers (1987) describes these three types as follows:

> People with ISTJ preferences are extremely dependable and have a complete, realistic, and practical respect for the facts....ISTJs are thorough, poinstaking, systematic, hard-working, and careful with particulars and procedures....ISTJs often choose careers where their talents for organization and accuracy are rewarded....They often move into supervisory and management roles. (p. 20)

> ESTJ people....like to organize projects and then act to get things done....They tend to focus on the job, not the people behind the job....They are more interested in seeing present realities than future possibilities....They like jobs where the results of their work are immediate, visible, and tangible....They enjoy administration, where they can set goals, make decisions, and give the necessary orders. (p. 10)

> ENTJ people....enjoy executive action and long-range planning. Reliance on thinking makes them logical, analytical, objectively critical, and not likely to be concerned by anything but reasoning. They tend to focus on the ideas, not the person behind the ideas....ENTJs are seldom content in jobs that make no demand upon their intuition. They are stimulated by problems and are often found in executive jobs where they can find and implement new solutions. (p. 11)

All three of these personality types are characteristic of persons to whom positions in school administration would appear to be desirable. The Thinking and Judging components in all three styles emphasize the logical use of facts in decision making and the desire to structure and control life situations. Missing from these three styles, however, are emphases on person-centered values and a flexible and spontaneous approach to life situations.

Insert Table 10 about here

While there were no statistically significant differences (chi square) among those with the three most frequently occurring personality types with respect to age, years' experience in education, race, position, assessors' overall skill rating, or degree of reported skill improvement, there were some interesting findings regarding gender, self-directed learning readiness, and number of skills worked on.

With regard to gender, 75% of the ISTJ group were males, while 78% and 64% of the ESTJ and ENTJ groups respectively were females ($X2(2) = 6.49$, $p < .03$). With regard to self-directed learning readiness, 58% of the ISTJs, 78% of the ESTJs, and 100% of the ENTJs scored Above Average or High on the SDLRS instrument, as opposed to Average or Below ($X2(2) = 5.83$, $p < .05$). With respect to the number of skills worked on, while there were no statistically significant findings, it was observed that 100% of the ISTJs, 50% of the ESTJs, and 63% of the ENTJs chose more than a single administrative skill to work to improve ($X2(2) = 4.98$, $p. < 08$).

DISCUSSION

The belief that persons participating in an assessment center require a formally structured follow-up program in order to grow professionally after assessment was not borne out in this investigation. The participants in this study appear to have created their own opportunities for growth. In fact, one may conclude that the persons interviewed here used assessment information to plan their growth activities since they exhibited a strong tendency to develop skill areas rated low by the assessors. As will be recalled, specific recommendations on strategies to increase skill level on these low rated skills are a part of the assessment feedback process.

Even though the large majority (91%) of persons interviewed took action to increase skill levels, three of the four who did not were a teacher, a guidance counselor and a supervisor. The reason for sending persons in these positions to the assessment center was often to explore their interest and aptitude for administration. As one teacher who had scored fairly highly on the assessment process commented, "As a result of the center, I decided I don't want to be a principal." It is unlikely that she would pursue administrative skill development after the center.

Strategies used to develop skills were most often strategies over which the participant had control such as practicing the skill in the job setting and engaging in readings to gain further information. This finding could be the result of two factors: the absence of formal programs and structures for developing

skills so that participants must create their own approach and the high level of self-directed learning readiness exhibited by this particular group of participants. Such a high SDLR would indicate a preference to design one's own learning including both objectives and methods, and it would tend to explain the finding that such a large majority of the participants pursued developmental efforts in the absence of formal support structures.

The participants also displayed a degree of independence in their decisions to improve in a particular skill and in selecting strategies for improvement. SDLR may be a critical element in fostering this independence along with the support for development coming from the sponsoring organizations. Since 62% of the respondents reported receiving material support and all but one participant indicated that the sponsoring organization had provided moral support for professional growth, it is difficult to judge whether SDLR or organizational support is the more potent factor.

Findings regarding the amount of improvement in skill level(s) have the limitation of being based on the individuals' perceptions of their own growth. While we might assume that the amount of improvement indicated may be somewhat inflated, this perception of improvement may be an important factor for the participants in order that they continue with developmental activities. In other words, if they do not perceive they are improving, they may not continue to try. The data here show that they do, indeed, persist in attempts to develop their skills.

Many were still working on specific skills one and one half years after assessment!

Although SDLR score was not significantly related to improvement level, it was shown to be related to assessed level of administrative skills. A number of research questions can be generated from this finding. For example, does a lower SDLR score indicate not only a lack of motivational readiness for independent development activities but also a lack of skills to effectively carry out such activities when they are attempted? Further investigation in this area is warranted.

A difference also exists in Myers-Briggs scores and level of improvement (though not significant at the .05 level). Namely, Intuitive types tended to indicate more improvement than their Sensing counterparts. Intuitive persons enjoy learning a new skill and doing things with an innovative bent (Hirsh and Kummerow, 1987). By this definition, these personality types may be inclined to put more effort into growth activities and to be more pleased with their outcomes.

Although the amount of skill improvement was unrelated to most organizational factors, moral support was critical to improvement in this study. This finding is limited by the fact that only one person indicated not receiving moral support, but that individual also perceived little skill improvement as a result of development activities.

The reasons that sponsoring agencies reported for their participation in assessment did not relate primarily to the efforts of the participants to improve their skills. These agencies stated that participation was aimed at both professional

growth and less often, at selection, but in the final analysis, many more of them used the process as a selection tool than earlier indicated such use. While the intent to use assessment results for professional development was present in 63% of the original responses from the sponsoring organizations, it was actually used thus in only 44% of the organizations. A review of the actions initiated by the organizations after assessment reveals that limited follow-up techniques, such as a meeting with the assessee, were common. More time consuming and costly activities, such as financial support and collaboration in designing a development program, rarely were undertaken. While the intentions were good, the realities of commitment of time and resources may account for these discrepancies. Few actions were taken at the building level. An explanation for this finding may be that the commitment to sponsor assessment center participants was made at the central office level so any commitment for follow-up also resided at that level.

Finally, the results of the MBTI scores in this study support the findings of Lueder (1983) described earlier. Lueder contends that administrators tend to be STJ personality types. Sixty eight percent of the participants in this study fell into the ESTJ and ISTJ categories.

It is also interesting to note the difference on MBTI scores for males and females in this study. Although the TJ profile (Thinking and Judging) is common to more than half of the participants, the Introvert type for this sample tended to be male while the Extrovert typology tended to be female.

CONCLUSIONS

The generalizability of this study is limited to the population from which the sample was drawn, namely, participants in one regional school administrator assessment center. However, the study suggests that questions such as those raised here should be investigated in other assessment center sites. Findings from studies such as this can provide new insights into strategies for making the assessment center process a growthful one for the individuals involved. By identifying participants' preferred growth strategies, centers can better assist participants in those efforts. Since the support of the sponsoring organization also appears vital, centers need to consider ways to gain organizational commitment for supporting participants subsequent to assessment.

The preliminary glimpse of self-directed learning readiness and personality type as it relates to assessment score and professional development needs much further investigation. For example, do primarily self-directed learners take advantage of assessment centers, or are school administrators, in general, high in SDL? Is the gender distinction in personality type found here typical of other populations of aspiring or practicing administrators? Does personality type predict the scores on individual skill dimensions? These and many other questions arise but remain unanswered in this study.

In spite of these unanswered questions and the preliminary nature of the research, one can conclude that these assessment center participants use the assessment results as a long-term

catalyst for professional growth. This suggests assessment centers and sponsoring organizations must find ways to sustain and support this energy in order to better prepare aspiring administrators for the challenges of school leadership in the future. Participant development after assessment remains a ripe field for further research.

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SKILLS TO BE ASSESSED

1. PROBLEM ANALYSIS	Ability to seek out relevant data and analyze complex information to determine the important elements of a problem situation; searching for information with a purpose.
2. JUDGMENT	Ability to reach logical conclusions and make high quality decisions based on available information; skill in identifying educational needs and setting priorities; ability to evaluate critically written communications.
3. ORGANIZATIONAL ABILITY	Ability to plan, schedule, and control the work of others; skill in using resources in an optimal fashion; ability to deal with a volume of paperwork and heavy demands on one's time.
4. DECISIVENESS	Ability to recognize when a decision is required (disregarding the quality of the decision) and to act quickly.
5. LEADERSHIP	Ability to get others involved in solving problems; ability to recognize when a group requires direction, to interact with a group effectively and to guide them to the accomplishment of a task.
6. SENSITIVITY	Ability to perceive the needs, concerns, and personal problems of others; skill in resolving conflicts; tact in dealing with persons from different backgrounds; ability to deal effectively with people concerning emotional issues; knowing what information to communicate and to whom.
7. STRESS TOLERANCE	Ability to perform under pressure and during opposition; ability to think on one's feet.
8. ORAL COMMUNICATION	Ability to make a clear oral presentation of facts or ideas.
9. WRITTEN COMMUNICATION	Ability to express ideas clearly in writing; to write appropriately for different audiences — students, teachers, parents, et al.
10. RANGE OF INTEREST	Competence to discuss a variety of subjects — educational, political, current events, economic, etc.; desire to actively participate in events.
11. PERSONAL MOTIVATION	Need to achieve in all activities attempted; evidence that work is important to personal satisfaction; ability to be self-policing.
12. EDUCATIONAL VALUES	Possession of a well-reasoned educational philosophy; receptiveness to new ideas and change.

Table 1

Percent of Participants Taking Improvement Action by Demographic Variables

Variable	Number Taking Action	Percent of Total
Sex		
Male	19	45.2
Female	23	54.7
Race		
Caucasian	32	76.2
Hispanic	2	4.7
Black	8	19.1
Position		
Assistant Principal	28	66.7
Principal	6	14.3
Teacher	5	11.9
Guidance Counselor	0	7.1
Director/Manager	3	
Supervisor	0	
Age		
20-39	20	47.6
40-59	22	52.4
Years Experience in Education		
5-14	14	33.3
15+	28	66.7
Years Experience in Administration		
0-3	26	61.9
4+	16	38.1
Assessor's Score		
*Lower	16	38.1
*Higher	26	61.9

*Lower scores are 0-3.0 on 5 point scale.
*Higher scores are 3.1-5.0 on 5 point scale.

Table 2

Chi Square Analyses for Certain Demographic Variables and Number of Skills Developed

Variables	One Skill	More Than One Skill	Chi Square Probability
Sex			
Male	3 (16)[1]	16 (84)	
Female	10 (43)	13 (57)	0.053
Position			
Assistant Principal	8 (29)	20 (71)	
Principal/Manager	5 (56)	4 (44)	
Teacher	0 (0)	5 (100)	0.088
Race			
Caucasian	8 (25)	24 (75)	
Black	5 (50)	5 (50)	0.136
Hispanic			
Assessor's Score			
Lower[2]	3 (19)	13 (81)	
Higher[3]	10 (38)	16 (62)	0.180
Years Experience Education			
0-4 years	0 (0)	0 (0)	
5-14 years	5 (36)	9 (64)	
15+ years	8 (29)	10 (71)	0.637
Years Experience Administration			
0-3 years	7 (27)	19 (73)	
4+ years	6 (37)	10 (63)	0.471
Age			
20-39	7 (35)	13 (65)	
40-59	6 (27)	16 (73)	
Over 59	0	0	0.588

[1]Numbers in parentheses are raw percentages.

[2]Lower scores are 0-3.0 on 5 point scale.

[3]Higher scores are 3.1-5.0 on 5 point scale.

Table 3

Correlations Between Assessor's Ratings and Decisions to Work to Improve Skills

Skills	Correlations (Pearson)	Significance Level
Problem Analysis	-0.22	0.1565
Judgment	-0.17	0.2891
Decisiveness	-0.20	0.1957
Organizational Ability	-0.16	0.3065
Leadership	-0.25	0.1145
Sensitivity	-0.46	0.0024
Stress Tolerance	0.18	0.2674
Oral Communication	-0.28	0.0781
Written Communication	-0.25	0.1087
Range of Interests	-0.43	0.0040
Personal Motivation	-0.38	0.0142
Educational Values	-0.60	0.0001

Table 4

Actions Taken for Each of the Twelve Skill Areas

Actions	PA	J	D	OA	L	S	ST	OC	WC	RI	PM	EV	%
Credit Course	5	3	3	3	3	2	0	2	0	2	1	4	33
Non-Credit Workshop[1]	2	2	3	4	2	4	0	2	1	4	3	4	36
Non-Credit Workshop[2]	2	0	0	4	4	1	1	0	0	4	0	4	23
Mentor	5	3	2	6	6	7	2	5	5	5	3	4	62
Reading	8	5	4	7	8	9	3	4	4	7	3	10	84
Practice	6	6	5	9	7	10	3	6	6	7	4	9	91
Other	4	4	4	5	3	4	1	3	3	4	1	4	47
Tot3	9	6	7	9	9	10	3	6	6	7	4	10	(86)

[1]Non-credit workshop chosen on their own.

[2]Non-credit workshop they were asked to attend.

[3]Total number of persons indicating taking action in this skill area.

[4]Number of times the action was taken divided by total number of persons reporting actions. (An indication of the preference for each action).

Table 5

Interviewees Who Took Improvement Actions (N=42) By Skills Worked On

Skills	Number Who Took Action	Number Not Taking Action	Percentage Taking Action
Problem Analysis	9	33	21.4
Judgment	6	36	14.3
Decisiveness	7	35	16.7
Original Ability	9	33	21.4
Leadership	9	33	21.4
Sensitivity	10	32	23.8
Stress Tolerance	3	39	7.1
Oral Communication	5	37	11.9
Written Communication	7	35	16.7
Range of Interests	7	35	16.7
Personal Motivation	4	38	9.5
Educational Values	10	32	23.8

Table 6

Relationships Between Certain Demographic Variables and Levels of Skill Improvement

Variables	N	Level of Improvement[1]	Significance Level
Race			
Caucasian	29	2.94	
Non-Caucasian	10	3.52	.0033
SDLRS Score			
Low[2]	8	2.84	
High[3]	31	3.15	
Myers-Briggs			
Sensing	18	2.96	
Intuitive	21	3.20	.1821

[1]Scale of 1-4 (1=No improvement; 4=Great Improvement).

[2]Low scores on Self-Directed Learning Readiness Scale are between 58-226.

[3]High scores on SDLRS are between 227-290.

Table 7

Actions Taken By Employing Agencies

Actions	At Central Office	At Building Level	Both
In-service training provided to assessee	5 (31)[1]	3 (19)	0 (0)
Assessee required to report on improvement activities in writing	4 (25)	0 (0)	0 (0)
Meeting held with assessee to review assessment results	11 (69)	0 (0)	4 (25)
Financial support provided to assessee	6 (38)	1 (6)	1 (6)
Specific skills selected for assessee to work on	5 (31)	2 (13)	1 (6)
Meeting held with assessee's supervisor to discuss assessment results	9 (56)	0 (0)	3 (19)
Assessee required to set improvement goals	2 (13)	1 (6)	0 (0)
Non-financial support provided to assessee to improve skills	4 (25)	4 (25)	1 (6)
Assessee's skill improvement monitored	6 (38)	1 (6)	1 (6)
Assessee assigned projects to improve specific skills	1 (6)	4 (25)	1 (6)
Assessee sent to training program to improve skills	3 (19)	1 (6)	1 (6)
Assessee met with to help set learning goals and activities	5 (31)	0 (0)	1 (6)
Assessee helped in deciding what skills to work on	4 (25)	4 (25)	1 (6)
Assessee helped in deciding what actions to take	4 (25)	2 (13)	2 (13)
Other	0 (0)	0 (0)	0 (0)

[1]Percentage of agencies responding are shown in parentheses.

Table 8

Interviewees Who Took Improvement Actions (N=42) By SDLRS and MBTI Results

Variables	Number Who Took Action	Percent of Total	Number Not Taking Action	Percentage Taking Action
SDLRS Scores				
Low	1	2.3	0	100.0
Average	9	21.4	0	100.0
Above Average	17	40.5	1	94.4
High	15	35.7	3	83.3
MBTI Results				
Extravert	23	54.8	4	85.2
Introvert	19	45.2	0	100.0
Sensing	19	45.2	2	90.5
Intuitive	23	54.8	2	92.0
Thinking	30	71.4	3	90.9
Feeling	12	28.6	1	92.3
Judging	33	78.6	4	89.2
Perceiving	9	21.4	0	100.0

Table 9

Percent of Participant SDLRS Score by Overall Assessment Score

SDLRS Score	Overall Assessment Score	
	Lower*	Higher*
SDLRS Score Low/Average	16.67%	30%
SDLRS Score Above Average/High	28.13%	71.88%

Chi-Square Probability: 0.017

*Lower scores are 0-3.0 on a 5 point scale

*Higher scores are 3.1-5.0 on a 5 point scale

Table 10

Myers-Briggs Types by Gender Assessment Study

Type	Male	Female	Total
ISTJ	9	3	12
ISTP	0	0	0
ISFJ	1	1	2
ISFP	0	0	0
INFJ	1	2	3
INFP	1	0	1
INTJ	0	3	3
INTP	1	3	4
ESTP	0	0	0
ESTJ	2	7	9
ESFP	0	0	0
ESFJ	0	3	3
ENFP	1	2	3
ENFJ	3	1	4
ENTP	2	1	3
ENTJ	4	7	11
	--	--	--
TOTAL	25	33	58